

ABSTRACT OF THE DISCLOSURE

A composite separator plate for use in a fuel cell stack and method of manufacture is provided. The composite separator plate includes a plurality of elongated support members oriented generally parallel to each other and a polymeric body portion formed around the support members. The body portion includes a first surface with a plurality of flow channels and a second surface opposite the first surface. A plurality of electrically conductive fibers are disposed within the polymeric body portion, each fiber extending continuously from the first surface of the polymeric body portion to the second surface of the polymeric body portion in a through plane configuration.